UNITED STATES PATENT AND TRADEMARK OFFICE

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EXAMINER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>23 January 2009</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-44</u> is/are pending in the application.

    4a) Of the above claim(s) <u>13-23 and 36-44</u> is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-8, 12, 24-31, 35</u> is/are rejected.

7)☒ Claim(s) <u>9-11 and 32-34</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

       1.☐ Certified copies of the priority documents have been received.

       2.☐ Certified copies of the priority documents have been received in Application No. _____ .

       3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____ .

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____ .

DETAILED ACTION

Claim Rejections - 35 USC § 101

Claim 1 is rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. While the claims recite a series of steps or acts to be performed, a statutory "process" under 35 U.S.C. 101 must (1) be tied to particular machine, or (2) transform underlying subject matter (such as an article or material) to a different state or thing. See page 10 of In Re Bilski 88 USPQ2d 1385. The instant claims are neither positively tied to a particular machine that accomplishes the claimed method steps nor transform underlying subject matter, and therefore do not qualify as a statutory process. The claimed method including steps of:

" determining targeted queuing delays for reverse link transmit data; monitoring transmit data queue sizes and ongoing reverse link throughput expressed as current average throughput for data transmissions by the mobile terminal on the reverse link; and generating reverse link rate requests based on determining whether tarqeted queuing delay violations are expected given the transmit data queue sizes and the ongoing reverse link throughput"

 is broad enough that the claim could be completely performed mentally, verbally or without a machine nor is any transformation apparent. Applicant is required to amend the claim such that there is at least one limitation having a physical structure hardware performing the limitation.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

Claims 1 and 24 are rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention.

Regarding claims 1 and 24, it is not clearly addressed at " determining whether

targeted queuing delay violations **are expected given the tranmit data queue size**"

However, according to specification on page 3, para[0007], and page 6, para[0015],

examiner considers the claimed "target queuing delay violations " as determining

whether the time limits data to be transmitted from the mobile station 12 for the service

instance can "wait" in the mobile station queue is violated or exceeded or too long ".

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-8, 12, 24-31 and 35 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Nanda et al. (US 2004/0160922 A1) in view of Lohtia et al. (US pat.

7,116,708 B2).

In claims 1, 3, 24 and 26, Nanda et al. discloses a method of reverse link rate control at

a mobile station (see abstract; determining data rate for a reverse link) comprising:

determining targeted queuing delays for reverse link transmit data (examiner considers

the claimed "target queue delay" as " a maximum permitted delay" in Nanda et al. Refer

to para [0022] and [0025] and fig.4, step 402; a maximum permitted delay for a

service/flow is negotiated between a mobile station and base station) ;

monitoring transmit data queue sizes (since the claimed limitation does not indicate

how the data queue size is monitored; therefore, examiner relies upon para [0027] of

Nanda et al. which discloses "mobile station arranges the output queue so that packets

are stored in the order of their deadlines and transmitted before their deadline; wherein

the deadline refers to the maximum permitted delay for the service. See further fig.4,

step 403). Nanda et al. further discloses generating reverse link rate requests based on

determining whether targeted queuing delay violations are expected given the transmit

data queue sizes (see para [0027] and [0028] and fig.4, steps 405, 406; the mobile

station determines a required data rate based on the deadlines (which is described as

maximum permitted delay in para[0027]) associated with the packets in the output

queue. Further, in para [0037], the mobile station may require a higher rate to satisfy its

QOS if the mobile station determines that any packet in its queue would miss its

deadline at a current rate). Nanda et al. discloses generating reverse link rate request

based on throughput for data transmission by the mobile terminal (since applicant

defines the meaning of "throughput" in the Remark filed on 1/23/09, pages 15, 16 as

"how much data is put through a channel or channel efficiency" and the body of the

claim does not indicate which device monitors "the throughput" of data transmission.

Therefore, in Nanda et al., fig.4, steps 411, 412, 413, para [0102]; examiner considers

"a data congestion between the mobile and the base station" as " throughput" because

the data congestion alerted to the mobile station represents an amount of data

transmission has been reduced due to the congestion which means the data

transmission efficiency has been reduced than normal. Based on the data congestion,

the mobile station drops packets in the queue, determines a new data rates for

transmission of the new queue of data packet).

Nanda et al. does not disclose generating a reverse link rate request based on the

monitored average throughput for data transmission by the mobile terminal on the

reverse link.

Lohtia et al. discloses a method of controlling the data rate transfer over a wireless link

between a mobile station 43 and a RNC 40 (see abstract). In specifcally, at fig.2, col.4,

lines 60-67; Lohtia discloses a users or mobile station 43 requests a higher data rates if

an average throughput for the user is less than the requested data rate (generating a

reverse link rate request based on the monitored average throughput for data

transmission by the mobile terminal on the reverse link). Therefore, it would have been

obvious to one skilled in the art to apply the teaching of average throughput into Nanda

et al. to generate the reverse link rate request based on an average throughput of the

mobile station. The motivation is provide channel efficiency.

In claims 12 and 35, Nanda et al. does not disclose calculating an effective data rate

from the required data rate that can be achieved using the requested effective data rate.

Lohtia discloses in col.2, lines 35-45 and col.5, lines 45-51; despite a high data rate

requested by the mobile station, the scheduler 100 (see fig.2) is able to reduce the

effective data rate of communications to mobile station 43 if the scheduler 100

determines that the application alyer 102 does not required the requested high dada

rate, of if the conditions in the network do not permit transmission at the requested rate

(calculating an effective data rate from the required data rate that can be achieved using

the requested effective data rate). Therefore, it would have been obvious to one skilled

in the art to apply the determining of effective data rate into the Nada et al. so that a

mobile station is allocated data rate based on needs. The motivation is to reduce waste

of resources in the network.

IN claims 2 and 25, Nanda et al. discloses determining targeted queuing delays for

reverse link transmit data comprises determining a targeted queuing delay for each

service instance being supported by the mobile station (see fig.4, steps 401, 402, 403,

para [0102]; mobile station determines packets for transmission for a number of

communicatin services including determining a transmission deadline and arranges the

packets in a queue for transmission in accordance with the determined transmission

deadline).

In claims 4 and 27, Nanda et al. discloses generating reverse link rate requests based

on the transmit data queue sizes, the ongoing reverse link throughput, and the targeted

queuing delays comprises determining whether an expected queuing delay of any

service instance exceeds a target queuing delay for that service instance and, if so,

requesting a reverse link rate increase (see para [0037], [0051]; the mobile station may

require a higher rate to satisfy its QOS if the mobile station determines that any packet

in its queue would miss its deadline at a current rate).

In claims 5 and 28, Nanda et al. discloses generating reverse link rate requests based

on the transmit data queue sizes, the ongoing reverse link throughput, and the targeted

queuing delays comprises determining whether expected queuing delays for all service

instances are below target queuing delays defined for the service instances and, if so,

requesting a reverse link rate decrease (see para[0064], mobile station may request to

decrease , increase the grant or request) .

 In claims 6 and 29, nanda et al. discloses determining a targeted queuing delay for

each service instance being supported by the mobile station comprises receiving

service instance delay requirements from a wireless communication network supporting

the mobile station (see para [0025], mobile station is awared of the negotiated QOS

parameters such as maximum delay associated with the flow).

In claims 7 and 30, nanda et al. discloses generating reverse link rate requests based

on the transmit data queue sizes, the ongoing reverse link throughput, and the targeted

queuing delays comprises generating reverse link rate requests on an event-triggered

basis by comparing expected queuing delays for each of one or more service instances

to targeted queuing delays associated with those service instances (see fig.4, steps

411, 412, 413, 414, para [0102]; based on the congestion (even- triggered basis)

alerted to the mobile station, mobile station determines a new data rate for

transmission, wherein the new data rate is lower than previously determined data rate).

In claims 8 and 31,Nanda et al. discloses generating reverse link rate requests based

on the transmit data queue sizes, the ongoing reverse link throughput, and the targeted

queuing delays comprises generating reverse link rate requests on a periodic basis (

see para [0062]; to manage the QOS such as maximum delay, periodic messages that

request rates and delay are preferable) to control an average queuing delay of the

mobile station relative to a targeted queuing delay.

Allowable Subject Matter

Claims 9-11, 32-34 are objected to as being dependent upon a rejected base

claim, but would be allowable if rewritten in independent form including all of the

limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

Au et al. (US pat. 7103350);

Scherzer et al. (US pat. 5895258 B1).

Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Hanh Nguyen whose telephone number is 571 272

3092. The examiner can normally be reached on Monday-Thursday from 8AM to

4:30PM. The examiner can also be reached on alternate.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Kwang Yao, can be reached on 5712723182. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

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For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

./Hanh Nguyen/

Primary Examiner, Art Unit 2416